

ASL

**Australian Society
for Limnology Inc**

NEWSLETTER

Volume 35 Number 2

June 1997

Registered by Australia Post

Print Post Publication No. PP381667/00125

ISSN 1037-2512

AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology Inc. (ASL) is an association of over 500 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, government and private institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

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Membership Infomation and a list of the Regional Executive Officers can be found at the back of this Newsletter

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Material for publication in the September 1997 Issue of the Newsletter should be sent to the Editor (see back pages) before 30th September 1997.

Long articles should be forwarded as unformatted text on a disk or via email.

This Newsletter is printed by ETU Publications,
The University of Adelaide.

EDITORIAL

A short newsletter that will hopefully arrive on your desks sometime before the deadline for the next issue (fingers crossed).

Has the ASL email newsgroup taken over part of the role of the ASL Newsletter??? This is a question I would like to discuss at the Albury Congress. Much of the information that flies around on the Newsgroup could also be printed in the Newsletter - but is this duplication?? How many members are not on the Newsgroup?? would these members like a summary of the Newsgroup information in the Newsletter rather than complete articles?? Think about this and bring your ideas to Albury.

Many members must have attended conferences and workshops over the past 6 to 12 months - where are the reports??

OK, see you all in Albury, and anyone interested in taking over as Editor - you know who to contact!!

DEADLINES FOR THE NEWSLETTER IN 1997

The following are the deadlines for remaining issues of the ASL Newsletter Volume 35.

Volume	Deadline
<i>Volume 35</i>	
September 1997, No. 3	30th September 1997
December 1997, No. 4	31st December 1997

FROM THE PRESIDENT

Hallo ASL from the relative cool climates of northern Australia. This time I will not preach about the need for ASL to become something it has never been, not because I've gone off the idea, but because there are other things to preach about. So, I will take the luxury of the expectation that the President includes a statement in every newsletter issue to get up on one of my soapboxes.

OK, how much money did you get from the latest funding rounds? Enough? Now, an honest answer, please. Why? If you do not appreciate the reasons for seemingly prying or even supercilious questions may I draw your attention to the report by the Australian National Audit Office into expenditure over the past eight years on the National Landcare Program, One Billion Trees and Save the Bush programs. In short, this highlights the disturbing figures that two federal departments were unable to show that funds of over \$156 million, allocated to 2322 grants, had been spent on the projects for which they were intended and were unable to indicate in detail the outcomes achieved from any of the programs. Disturbing? But what has it to do with ASL?

I have heard many ASL aligned scientists rubbish attempts to establish community-based programs, such as those mentioned above, but also others. Do these figures support their attitudes? Should we continue down this pathway when our scientific research is being insufficiently funded? My answer is YES. But, not without greater accountability. That may be an obvious response, but I would add that if the money is not demonstrably being spent well it should not be simply diverted to other programs (including our value for money research ones). Community-based programs have immense value for conservation and sustainable development (and I do not care for arguments about oxymoron's). Thus, they must be developed and must produce beneficial results (tangible and non-tangible ones). Book-keeping and better administration may be called for, but I also think that much more involvement by the scientific community is needed. And this extends to community-based monitoring programs. If you consider that such programs are poorly designed and/or implemented then get involved and make them work. I heard a teacher in Perth challenge a group of "monitors" - if you have criticisms about our community-based monitoring programs then come and talk to us and help us get it right. She was great and I won't preach to her.

But, back to the audit office. This report has some consequence for the Natural Heritage Trust which includes funding for the National Wetlands and Endangered Species Programs. Whilst the NHT may not be rich pickings for limnologists can we avoid an input to ensure the scientific base is sound? Some scientists think it is not cost effective to transmit research findings to many small groups. In response I consider that they have lost the plot - we must do this and we must find ways of doing it effectively. Perhaps this would occur if we really did involve the local (and not so

local) community groups in our scientific fora and planning and even "control" committees. Now I am preaching and, yes, I do believe this.

To finish this note I will return to a half-hearted statement that I made at a wetland workshop in Newcastle in February 1991. "We need to manage now. We do not need more research to do this." One Bill Williams agreed with me and took exception all in the one response. (That was clever.) Others misused the statement and contorted it by deleting the connection between management, research and now. So, for a while I stopped using this statement. Now I am using it again and with more gusto. We do NOT need new information for todays management - we need to make better use of the existing information. (Yes, we do need new and better information in order to manage tomorrow and the day after.) So, we return to the issue of scientists ensuring that their valued information is received by the managers. A scientist will invariably retort that the mangers need to make the effort as well, but that, to me, is irrelevant to the case for scientists making the effort and making sure that they succeed, and investing in the effort and their local community. Is it cost effective? If this gets you into the NHT money box, it could be. But, if it ensures that science is useful and used, is their any argument? A change of culture and process yes - and that can not be all that bad! But does the seemingly prevailing cult of "grabbing" money from any but which source get in the way? (And, yes the eriss wetland program is also required to survive on a commercial base.)

More on this in Albury. I will enjoy the debate and even the retorts. I hope to see many of you in Albury and, in all seriousness, I would like to have your opinions on the above soapbox preachings - information transfer, community involvement and science are all important issues for managing our valued natural heritage.

(PS Following ASL convention I only get one year on the soapbox.)

Max Finlayson
ASL President 1996/97

PRATTLEBUT, SCUMOUR AND RUTTLE

NEW SOUTH WALES

AWT Ensignt

from: Simon Williams (williams@awtensight.nsw.gov.au)

A number of notable visitors to the macroinvertebrate laboratory in the past three months were **Jean Jackson**, **David Cartwright** and **John Hawking**. All were interested in the AWT voucher collection for their respective taxonomic studies. We would like to thank **Jean**, **David** and **John** for their efforts as it has resolved some of our taxonomic problems. **John Hawking** was also involved in the NATA audit of the macroinvertebrate laboratory, which has been recommended for NATA accreditation.

The NATA audit required **Colin Besley**, **Monica Mulder** and **Lisa Silva** to prepare and update the laboratory documents for NATA registration.

David Holleley, **Lisa** and **Colin** are completing macroinvertebrate samples for the environmental indicators program, an assessment of the urban waterways in the Sydney region. **Lynda Blunden** has been involved in the assessment of urban artificial wetlands in Sydney.

The catchment group (**Peter**, **Merran** and **Mike**) has been partially distracted from its water quality monitoring programme to assess water quality improvement that may result from the sewerage of 'backlog' areas in the Blue Mountains. **Merran** has also been working on an inventory of wetlands around Gosford.

Maria Marzella, **Amanda Kotlash** and **Simon Williams** have been busily completing macroinvertebrate samples from an environmental flow release. **Mick Gregory** is now completing the remaining IFIM samples since **Brendan McKie** has left to start his PHD in Townsville. **Ivor Grown**s is currently completing his DIPAC modelling for the Monitoring River Health program. Finally, congratulations to **Ivor Grown**s who won the senior biologist position.

COOPERATIVE RESEARCH CENTRE FOR FRESHWATER ECOLOGY

University of Canberra and general CRCFE notes

National Science Week

The National Science Festival, held in Canberra during April, provided an opportunity for the CRC for Freshwater Ecology to strut its stuff to more than 40,000 school students and the general public.

The CRCFE teamed up with the Faculty of Applied Science at the University of Canberra to present a billabong display which included live specimens aplenty – turtles, yabbies, fish, frogs and, of course, bugs.

Director **Peter Cullen** took the opportunity to launch the *Colour Guide to Invertebrates of Australian Inland Waters*, authored by John Hawking and Felicity Smith from the Murray-Darling Freshwater Research Centre, Albury. The launch was conducted at CRCFE's booth at the Science Festival and was attended by about 80 guests. Copies of this field guide are available from John Hawking, MDFRC, PO Box 921, Albury, NSW, 2640.

Peter Cullen provided an insight into the intricate structure of Cooperative Research Centres during the Australian Science Communicators' forum, *Communicating for cash – New sources for science funding*, which was held at the National Press Club during Science Week.

New research portfolio

The most absorbing issue for many CRC participants during the past few months has undoubtedly been the development of a new research portfolio. Based on large, integrated projects, this portfolio will take the CRCFE through its remaining three and a half years of life.

To date, the two integrated projects have been approved in principle by the CRCFE Board: Ecology of Lowland Rivers, and Sediment and Nutrient Processes. A third individual project, The Granite Creek Landcare project, submitted by Prof Sam Lake, has also been approved in principle.

Another seven integrated and two individual projects have been developed and sent out for external review. A further four integrated and several individual projects are still being developed.

A modelling career for Richard

The CRCFE has completed, and submitted on time to LWRRDC, the final report for the National River Health Program's AusRivAS modelling and software development project. Justen Simpson and Richard Norris completed the project, both based at the University of Canberra.

The ACT component of the AusRivAS' reference site sampling has also been completed by Chris Williams and submitted (on time!) to LWRRDC.

Richard Norris will continue his modelling work (computer, not swim suits) through his association with another LWRRDC project being led by **Dr Jenny Davis** from Murdoch University. Jenny received a \$165,000 grant for the project, *Monitoring wetland health: National River Health Program protocols applicable*, which is expected to be completed in December 1998.

Teaching freshwater ecology

The second CRCFE workshop "Teaching Freshwater Ecology" was held at UC on May 10-11 and attended by 18 academics from all over Australia.

The workshop focused on how to most effectively present freshwater ecology research rather than the research itself. While emphasis in the past has been solely on research, academics and the public alike are becoming more aware of the importance of being able to effectively convey this research to students. The aim is to not only facilitate understanding, but to present the material in such a way as to encourage research amongst the students themselves.

The workshop was very much an 'ideas' forum with this year's group initiating a proposal to establish links through the CRC's education pages to university sites, providing information about freshwater ecology courses and details of field classes/courses and their dates.

Next year's workshop will refine a proposal to establish a research project to develop materials for teaching freshwater ecology. This may include material being provided through web sites where teachers in the field can gain practical knowledge in a particular area.

Recent Grant Successes

University of Canberra geomorphologist and CRC member, **Martin Thoms**, has received \$250,000 for a project that will explore the wetlands of the Lower Balonne on the NSW/Queensland border.

The three-year project, funded by Environment Australia, is being conducted in collaboration with the NSW Department of Land and Water Conservation and the Queensland Department of Natural Resources.

About 170 applications were received by Environment Australia for funding that went to just six projects.

Martin said that the project would focus on the importance of the entire river-wetland system, how they interact, and how the entire system can be best managed given the influence of impacts such as farming.

Bob Kearney, Head of the UC's School of Resource, Environmental and Heritage Sciences and past CRCFE Board member, was the recipient of a \$228,000 grant from the Fisheries Research and Development Corporation.

Bob's project will assess the key issues affecting freshwater fisheries and methods of promoting greater national cooperation.

This national project involves representatives from all states and territories and is aimed at developing a more coordinated and efficient national system for addressing freshwater fisheries issues.

Richard Norris and **Justen Simpson** (both UC) were awarded \$6000 by LWRRDC to assist them to attend an International workshop on RIVPACS to be held at Oxford.

Bill Maher (UC) was awarded \$1500 from the National Eutrophication Management program to assist with publishing the Proceedings of the recent CRC Workshop on "Sampling Nutrients in Aquatic Ecosystems".

Ian Lawrence, **Peter Cullen** (both UC) and **Graham Harris** (CSIRO) have been awarded \$100,000 from the National Eutrophication Management program to study the factors that influence the algal composition and succession in Burrinjuck Reservoir, using existing data sets.

Environmental flows R&D priorities

Defining research and development priorities for environmental flows for the next three-four years was the aim of a LWRRDC meeting held last week.

Among the participants were CRCFE staff, **Shane Brooks**, **Ben Gawne** and **Martin Thoms**, who is also on the LWRRDC steering committee (along with **Peter Davies**) which is reviewing the work of consultants who have prepared an overview of environmental flows R&D. This document is also providing preliminary recommendations on future research needs.

Martin Thoms said that six main themes regarding future directions emerged from the meeting:

1. Flow environment relationships – how does flow interact with other environmental variables
2. Monitoring, evaluation and impact – an analysis of flow changes
3. Flow management
4. Social and economic tradeoffs
5. Community values and management objectives
6. Support activities – eg. education

The recommendations may be implemented under the National River Health Program's Environmental Flows Monitoring Initiative, which is jointly managed by LWRRDC and Environment Australia.

New Affiliate

NSW National Parks and Wildlife Service senior research scientist, **Dr Sue Briggs**, has been appointed as an affiliate member of the CRCFE. Sue is manager of the Wetland Ecology Unit and based at CSIRO, Gungahlin, ACT.

Sam scopes the environment

Professor Sam Lake, CRCFE Program Leader, Flowing Waters, (who was recently appointed as personal chair to the Department of Ecology and Evolutionary Biology at Monash University) attended the international SCOPE meeting on soil and sediment biodiversity.

SCOPE is the Scientific Committee of the Environment and it organises meetings and workshops on critical problems in ecology and environmental activities. From April 6-11 SCOPE held a workshop at Wageningen, the Netherlands.

The major purpose of the international workshop was to assess the level of knowledge on and the understanding of the relationships between biodiversity and ecological processes in soils, freshwater sediments and marine sediments.

Thirty-one delegates from many countries attended the workshop. Four Australian participated in the workshop, including **Dr Pat Hutchings** of the Australian Museum (marine), **Dr Dan Alongi** of AIMS (marine), **Dr VVSR Gupta** of CSIRO Division of Soils (terrestrial) and **Sam Lake** (freshwater).

Over the five days, gaps (many immense) in the current knowledge of biodiversity and ecological functioning in soils and sediments were identified. Cross-connections in ecological functioning between the three realms – terrestrial, freshwater and marine – became very evident.

An agenda of high priority research areas was drawn up along with some indication of profitable ways to tackle some of the difficult research problems.

Papers summarising proceedings of the workshop will be published in the journals *Ambio and Biodiversity and Conservation*.

Murray-Darling Freshwater Research Centre

Students solve case of wayward water user

Investigating the identity of an unknown villain who was polluting Albury waterways was the theme of the second annual CRC-Rotary Easter School on the Murray-Darling Basin (MDB), held from April 6-10. Twenty-five of the MDB's brightest year 11 science students were brought in to solve the case. The students were introduced to problem-solving approaches, teamwork, investigative techniques and the use of scientific equipment and resources through the mock investigation. **Mike Copland** and the Albury Rotary Club coordinated the school, another highly successful venture.

Dr Billabong

Daryl Nielsen has been accepted into the PhD program with Charles Sturt University. Daryl has been working on artificial billabongs in a Masters program funded by LWRRDC, CRCFE, MDFRC and CS University.

Daryl's project, which uses 16 artificial billabongs set up on the floodplain of the River Murray near Albury, investigates the effect of the variability and temporal pattern of water levels on the ecology of temporary and permanent floodplain waterbodies (billabongs).

Early results suggest that zooplankton (rotifers and microcrustaceans) numbers increase quickly in response to flooding irrespective of when the flooding takes place. There also appears to be a greater variety of zooplankton during winter-spring than during the summer period. It seems at this level the timing of flooding may be of limited importance. On the other hand, plant life (macrophytes) within the billabong is sensitive to the variability and seasonality of flooding.

Russ on rotifer committee

Russ Shiel was voted (in his absence) to be on the scientific committee for the 8th International Rotifer Symposium, to be held June 22-27 at St John's University in Collegeville, Minnesota. The rotifer meetings are triennial gatherings of specialists on this small (but highly important!) group of metazoans. This will be the first meeting held outside Europe, with some 131 attendees from more than 30 countries registered.

Russ will be presenting work from several CRCFE/MDFRC projects:

- Daryl Nielsen/Felicity Smith's artificial billabong flooding event;
- John Green (New Zealand)/Russ Shiel temporal floodplain water rotifers;
- Ros Pontin/Daryl Nielsen/Russ Shiel epiphytic rotifers (colonization study carried out in the artificial billabongs);
- Garth Watson's rapid rotifer trophic preparation method for SEM (poster), with an input into Ian Duggan's (University of Waikato, New Zealand) paper on rotifer diversity in ecotones of Waikato River floodplain lakes.

Lower Basin Laboratory

Laboratory leader **Ben Gawne** is slowly building up his rank and file. The lab now boasts four full-time staff, including **Shaun Meredith** who was introduced in the last ASL newsletter. **Cathy Francis**, who is investigating the effects of periodic drying on the flow of carbon and other nutrients from sediments into the water for her PhD thesis, joined us during March. **Brendan Ebner**, who is looking at the relationship between small fish and the tiny crustaceans (zooplankton) on which they feed, is our most recent recruit.

The increase in staff numbers means that we have commenced several research projects. We are also continuing to explore opportunities to develop new projects. Three new collaborative projects were recently awarded to the Lower Basin

Laboratory through the NSW Government's Water Management Fund. These include a carp ageing project to be conducted in conjunction with the University of Adelaide, a project investigating methods for carp control working with NSW Fisheries and a NSW's Department of Land and Water Conservation (DLWC) project that will look at the ecology of Menindee Lakes. The details of these projects are still being finalised but we expect to begin work soon.

The laboratory hosted two important visitors to the Sunraysia region during April: Victorian Deputy Premier and Minister for Agriculture and Natural Resources, **Pat McNamara** MP, and Parliamentary Secretary to the Environment.

CRCFE Board meets in Mildura

The CRCFE Board met for the first time at the Lower Basin Laboratory on May 16 and discussed, among other things, the Centre's new research portfolio.

The Board gave the laboratory the go ahead on its Lowland River Ecosystem Function project which is aimed at determining what effect floods that inundate the floodplain have on the cycling of carbon within the river system.

While funding for this project, to be led by **Dr Ben Gawne**, is yet to be finalised, it will mean new staff additions as well as a broader range of work being conducted at the Mildura lab. Aquatic ecologists from throughout Australia will also be involved in the project. The project will undoubtedly increase the traffic through the lab.

La Trobe University

30 new species for mayfly guides

Thirty new species of mayfly have been introduced to Australian science, as a result of work being conducted by La Trobe University ecologist, **Dr Phil Suter**.

Phil is conducting the taxonomic work under the auspices of the National River Health Program with funds provided by the Land and Water Resources Research and Development Corporation.

To date, at least six new genera have been identified in the Caenidae and Bactidae families. Material for the taxonomic work has been gathered from NRHP teams from more than 1,000 sites throughout Australia.

Phil said the taxonomic work would not only contribute to the inventory of Australian insects, but would assist in developing the biological monitoring techniques used to assess aquatic health.

Phil called for increased funding for taxonomic work within Australia and warned that overseas taxonomists were ready to step in to fill the taxonomic niche that was not being supported locally.

The danger in this, he said, was that overseas taxonomists rarely had an understanding of the complexity and diversity of Australian fauna. In addition, it would eliminate opportunities for young scientists in new taxonomic areas.

Phil's taxonomic work is due to be completed at the end of the year and will be released in a new CRCFE taxonomic guide.

TASMANIA

from: Jean Jackson (Jean.Jackson@zoo.utas.edu.au)

Only a few snippets from Tas, more details next time:

Sam Hannon, one of **Rob White's** Honours students is studying platyhelminth parasites of galaxiid fishes. **Rob Walsh** is identifying macroinvertebrates from wetlands in the north east for the Queen Victoria Museum with money from the Plomley Foundation.

Sarah Munks and **Helen Otley** (Forest Practices Unit) are continuing a study on diet, energetics and behaviour of platypus at Lake Lea near Cradle Mountain.

The Tasmanian invertebrate newsletter *Invertebrata* is in production again. Contact the editor **Bob Mesibov** (mesibov@southcom.com.au) with news and articles relating to Tasmanian invertebrates or to get on the mailing list.

QUEENSLAND

from: George Lukacs (ACTFR) and Fiona McKenzie (Griffith University)

this is Prattlebut that should have been printed in the March Newsletter - apologies from the editor to all Queenslanders.....

North Queensland

Australian Centre for Tropical Freshwater Research (JCU)

Stephen Skull completed his PhD (*Melaleuca*, fire and habitat fragmentation in the Hinchinbrook region) in December and has decided to pack up and go travelling around Oz (be sure to catch the travelling road show when it comes to a Uni near you). The ACTFR is currently looking for a replacement botanist/ecologist - if anyone is interested please contact us - it'll be advertised soon. Meanwhile I'm still procrastinating with my write-up - but still on-course to hand in this year. **John Faithful** is on 2 months leave hoping to finalise his data analyses and commence writing up his thesis on the effect of constant high turbidity on the limnology of the Burdekin Dam reservoir.

Niall Connolly was one of the many affected by the big wet and the destruction caused by Cyclone Justin, particularly by the damage to the Paluma/Crystal creek pipeline and the collapse of the Paluma range road. This prevented several PhD and Honours students accessing Birthday Creek, which was a real shame, as creeks in the Mt Spec region probably experienced one of the biggest spates since 1991. In fact, there has been so much water flowing about the place that both the Ross Dam and Burdekin River Dam have been going over their spillways (Townsville received just under 12 inches in 24 hrs when T.C. Justin went through - a startling sight for those of you who know the area).

New additions to the tropical limno fold include **Brendan McKie** - stream ecology (supervised by **Richard Pearson** and **Peter Cranston**) and **Kim Cheshire** - foodwebs (**Richard Pearson**). Good luck to both.

Zoology Department (JCU)

Ross Alford has been quite busy on three fronts: putting the finishing touches on the 10-year program of research into the ecology of the cane toad, working on a variety of projects aimed at eventually solving the puzzle of the disappearance of several species of frogs from high-elevation sites throughout the Wet Tropics, and starting a basic research program on the effects of variation in egg size on the ecological interactions experienced by larval frogs. The latter project has taken up a lot of time lately, as it is concerned with

frogs of the seasonally (sometimes seemingly eternally) dry woodlands, and since they are actually wet for once, he's been collecting as much data as possible, while possible.

Kay Bradfield is now doing a Ph.D. project comparing the ecology of declining and non-declining rainforest frogs. **Steve Richards** has gone from full-time to half-time employment so that he can actually finish his Ph.D. sometime in the next year or so. **Michael Crossland** has finished his Ph.D. on the effects of cane toads on native freshwater communities, and will receive his degree in May.

South-East Queensland

Queensland Department of Natural Resources (Toowoomba)

Proving that there is freshwater in southwest Qld the 'Dried Fish' Team have been out completing the second round of field work towards the MDBC Drought Impacts and Recovery project. Fisheries Biologist **David Moffat** has been gleefully counting the number of catfish and silver perch being caught, while **Paul Clayton** has been scratching his head as to how to best catch his beloved aquatic macroinvertebrates (STOP PRESS: Paul has just resigned to enter the cut and thrust world of consulting - more to come later). **Markus Knust** has been contemplating the hours of work he spent making fishing nets as they are ripped by snags, lost in floods and tampered with by the Goondiwindi locals, while **Sonia Pinwill** from the University of Queensland has been watching our antics through the sights of her dumpty level as she completes yet another *&%"\$# cross-section profile of yet another @#S%^ river! We're now wading through the pile of information we have on the upper Murray-Darling Basin to determine the effects of the recent severe drought on the drought recovery process.

Queensland MRHI

The Queensland MRHI lab is currently preparing for the FNARH (First National Assessment of River Health) scheduled to begin in May (cyclone Justin permitting). **Satish Choy** has just returned from Brunei as a Visiting Fellow where he worked on Atyids and macroinvertebrates at the University of Brunei. **Diane Conrick** and **Senad Adams** recently attended the Taxonomic workshop at Albury/Wodonga. The team continues to plug away at the mounds of MRHI samples collected over the past 2 years as well as those collected for local agency investigations. The lab played host to a student from University of Canberra, **Amanda Jones**, who was on a 10 week scholarship. **Vlad Matveev**, formerly from MDFRC (CRC for Freshwater Ecology), has taken up residence in a small corner of the lab as our tenant. He is now with CSIRO Land and Water working on a new program at biomanipulation of reservoirs in Queensland.

Griffith University

Margaret Greenway continues her research into the nutrient dynamics of *Melaleuca quiquenervia* wetlands and March 1997 will see 5 years of monthly litterfall data and surface water quality monitoring. Over the past 12 months she has also been monitoring groundwater fluctuations and water quality and this will continue during 1997. The effects of waterlogging on wetland soil are being investigated jointly with **Ian Phillips**. PhD student **Keith Bolton** is currently writing up his work on his pot and plot trials using *Melaleuca* species for wastewater treatment. **Margaret** has also been undertaking a joint project with the Department of Natural Resources to monitor the nutrient content of aquatic plants growing in constructed wetlands receiving secondary treated municipal wastewater.

CCISR (Centre for Catchment and In-Stream Research - Griffith University)

Late last year **Stuart Bunn** participated in the Windorah Workshop (Coopers Creek) and Environmental Flows in the North Dandalup River workshop for the Water and Rivers Commission of WA. **Stuart** and **Pete Davies** (WA) are apparently a memorable 'double act'. **Pete (Dr Bubbles) Davies** is a regular visitor to Qld, currently working on comparative studies of the influence of riparian vegetation on in-stream processes with **Stuart**. This work involves the deployment of numerous BCR's to measure benthic metabolism, and stable isotope analysis to determine the sources and fate of organic carbon in stream food webs. To date, much of the field work has been focussed on forested stream systems in the wet tropics, the subtropics and dry woodland (s/w Aust). Preliminary work is also underway in more arid zone systems, in the wet-dry tropics and central Qld. **Stuart** is also involved in other collaborative projects with **Neil Loneragan** (CSIRO Fisheries) on the links between flows and estuarine fisheries (funded by QDNR and SEQWB). Some of the work was presented at the Logan River workshop on Environmental flows last October and at the Estuaries and soft sediment habitats conference in Victoria in February.

Stuart Bunn is now the director of the Centre for Catchment and In-Stream Research. New staff include **Michelle Jenkins**, employed under the National Riparian Program and **Thorsten Mosisch** CCISR Research Fellow. **Thorsten Mosisch** and **Chris Marshall** have been conducting experiments on Kuhnist Ck, looking at shading and nutrients effects on filamentous algal growth. In the nearby Conondale Ranges (approx 1 1/2 hours north of Brisbane) the Conondale Field Station was recently "opened". Anyone interested in a home away from home while working in subtropical rainforest and/or temperate forest streams - contact **Stuart Bunn** (s.bunn@ens.gu.edu.au)

CCISR northerner **Brad Pusey** (based in Walkamin) has been gathering data from long term sites in the Mulgrave and Johnstone rivers as well as collecting data from the Russell and Tully rivers to test sites for habitat/fish assemblage models. **Mark Kennard**,

Jason Bird and **Brad** have recently completed a consultancy examining fish communities in dune lake systems of Cape Flattery - a silica sand mining area and 'worthy of the World heritage estate'. Crocodiles are plentiful however and the team had a too close an encounter whilst wading in one shallow lake. Mark can ably moonwalk backwards - even in waders! Following these field trips manuscripts have been completed on the Burdekin River, Lake Eacham rainbow fish and how much effort needs to be expended when trying to describe fish assemblage structures in streams. Most recently **Brad** and **Mark** have been venturing in to the world of fish taxonomy, describing a new genus and species of percichthyid from the Bloomfield River. **Paul Close** has ventured north from Canberra and will spend the next 18 months working on a project to examine larval fish distributions and microhabitat use.

New CCISR PhD students include **Romeny Lynch** and **Peter Negus** working on riparian influences to streams and **Dugald McGlashan** who is working on gene flow. **Fiona McKenzie's** PhD, investigating habitat in stream gravel sediments is progressing. She is about to commence a laboratory based study (at MDFRC - CRC for Freshwater Ecology) of microbial activity associated with specific sediment sizes. **Jon Marshall** is in the final stages of his PhD, he wanted to be writing by now but after a meticulous series of elegant experiments knows that nobody will believe that purple spotted gudgeons really do fly!!!!!!!!!!!!

NRA

Ngairé Phillips of the NRA (Natural Resources Assessments - not the National Riffle Authority) has completed here second post-dry sampling periods for the 2 long term projects she's involved in. She is currently developing a classification system (based on macroinvertebrates) for the Lakes at Cape Flattery (north of Cooktown) and is using biological monitoring techniques to examine the impact of copper mining on Gunpowder Creek, north west Queensland.

and this is the Queensland Prattlebut for June 1997.....

South-East Queensland

from: **Fiona McKenzie** (f.mckenzie@ens.gu.edu.au)

The south-east Queensland mob have no doubt been very busy though not much has come our way in terms of flows, or my way for prattlebut. I have heard rumours about field collection trips to far north Qld, western Qld, NT, the Pilbara and more locally in the Conondale Ranges and wetlands around Brisbane. Sadly, I don't have any details (subtle hint here!). The PhD student front at Griffith Uni does provide some news though: **Peter Negus** is studying the inputs of terrestrial invertebrates and fruits to the

diets of tropical freshwater fish in Australia using dietary analysis, water traps, stable carbon isotopes and feeding trials. **Pete** says his last trip to NQ wasnt so great due to low abundances of fish, presumably due to the passing of cyclone Justine a few weeks beforehand. Still on fishy topics, **Dugald McGlashan's** PhD is about the hierarchical analysis of genetic variation in three species of Australian freshwater fishes - or something along those lines. **Fiona McKenzie** is making progress with her investigation of the impacts of flow on macroinvertebrate gravel habitats. Her current laboratory study of respiration of sediment cores is proving very time consuming but will hopefully yeild interesting information about carbon metabolism rates in sediments.

North Queensland

from: George Lukacs

ACTFR, James Cook University, Townsville

Just a brief rap up for this edition - considering the info from the last newsletter is only getting to you now. All is well with my research into constructed wetlands to treat irrigation tailwater and the system to treat combined sugar mill and sewerage effluent. We're also about to commence a feasibility study into creating a combined freshwater/saltmarsh wetland (for habitat values), so if anyone has some relevant info - I'd be grateful.

Richard Pearson is still balancing his time between the Zoology Dept and the ACTFR; and could get a gig with Ringling Bros if he tried. **John Faithful** remains on study break and hoping to complete his PhD thesis this year. **Niall Connolly**, **Faye Christidis** and **Jacqui Nolen** are all busy knee-deep in macroinvertebrates. **Damien Burrows** is/has mostly been involved with assessments of the proposed gas pipeline route, but is also finishing up monitoring work on a training area for the Dept of Defence. The water quality lab is busy with QA and expanding into new labs so **Barry**, **Sandra**, **Liz**, **Nicole** and **Gillian** are kept mostly out of sight; particularly as **Andrew** is on secondment to the Dept of Environment.

Central Queensland University, Rockhampton

Leo Duivenvoorden is back from study leave after 7 months away in Jabiru (with Max Finlayson) and the USA (eutrophication in California , acid mine drainage in Colorado and organic pollution in Georgia). **Mark Seifert** has taken over from **Paul Clayton** in Toowoomba looking at bugs macroinverts in the Recovery after Drought Program (DNR/DoE). **David Roberts** (diet of small native fish), **Veronica Zeil** (water quality in the upper Nogoa R.) and **Bruce Kelso** (constructed wetlands for tertiary treatment) have all commenced their Masters Quals. **Larelle Fabbro** is close to finishing her PhD on

phytoplankton of the Fitzroy R. Leo and team are also about to start a project on phytoplankton of the lower Fitzroy R. with CSIRO.

WESTERN AUSTRALIA

Murdoch University

from: Kerry Trayler

Aquatic Ecosystem Research Group

There has been cause for celebrations of late at Murdoch.

The long awaited "Guide to Wetland Invertebrates" is hot off the press and there will be a party soon to commemorate it's release. It is hoped that **Faye Christidis** will make the journey back to Perth to join **Jenny Davis** here for the launch.

Jenny Davis has recently obtained LWRRDC funding to look at the application of NRHP protocols to monitoring wetland health. The project, which is a collaborative effort between **Jenny**, **Pierre Horwitz** (ECU), **Richard Norris** (ANU) and **Bruce Chessman** (LWC NSW) will determine the validity of applying a RIVPACS type model to wetlands and will establish a protocol for wetland bioassessment.

Poranee Utayopus, who has returned to Thailand, has had her PhD accepted. Poranne was an AIDAB student at Murdoch and researched her PhD on fluctuating assymetry of fish fauna in wetlands in Western Australia and Thailand.

Jane Latchford has at last submitted her PhD which examined the effectiveness and potential for environmental impacts of runnelling (an approach used to reduce mosquito breeding habitats) on saltmarsh vegetation. **Jane** is currently working as project manager with the Marine and Freshwater Research Laboratory at Murdoch.

Kerry Trayler is about to take up a position at the Water and Rivers Commission and has been trying to break speed records for finalizing her over committments prior to leaving.

Belinda Robson and **Ed Chester** have just begun a new project with **Jenny Davis** looking at the effects of turbulence on benthic stream fauna using the whiz-bang acoustic doppler velocimeter.

Melita Pennifold is taking a short break in Broome and on her return will be writing up her results on how the beasties in the Swan River sediments effect nutrient release. This is the perfect ploy for avoiding the mountain of samples on ice at present, but now that **Melita** has stopped collecting, the pile is getting smaller (or else a few got 'lost' in the cold room cleanout!).

University of Western Australia

from: Bruce Hamilton

Centre for Water Research

Anya Waite is about to join CWR from Victoria University in New Zealand. Her main research interest is phytoplankton physiology, particularly aggregation and disaggregation of diatoms. Although **Anya** has been involved primarily in biological oceanography, she plans to integrate closely with the limnology team at CWR. **Anya** completed her Ph.D. in British Columbia (working alongside several other Australian limnologists and oceanographers) before undertaking post-docs at Woods Hole and then New Zealand.

Jorg Imberger scooped yet another award in early June... the Clunies Ross National Science and Technology Medal. The award was introduced in 1991 to honour Australians who have played a leading role in the transfer of technology to industry, and also to identify examples or models that may be used to motivate others to do the same. **Jorg** earned the award for his outstanding contribution to the environmental engineering profession as a whole, through research, education, design methodologies, industry participation, and instrument manufacture to improve water quality, benefiting many large communities around the world.

The water quality modelling team at CWR is now well advanced on a water quality model for application to the Swan River. **Michael Herzfeld** is writing the water quality code, **Ben Hodges** the hydrodynamics code and **David Hamilton** has the task of putting together the pieces of Swan River research that span across 4 different universities, 2 divisions of CSIRO and the Water and Rivers Commission.

The Swan River research is now approaching an interesting stage, with talk of management authorities destratifying the estuary, using pure oxygen to oxygenate the water, or using a sediment remediation technique to prevent nutrient release from the sediments - maybe even this summer!!!

Amongst our students, **Rajendra Kurup** continues his Masters using a 2-dimensional model to look at water quality in the Swan River, **Terence Chan** has recently commenced a Ph.D. to look at management controls for water quality in the Swan River, **Brett Wallace** has amassed data to model ten dimictic lakes in the United States while also running 24 hour experiments to look at blue-green algae response to light and turbulence (any volunteers to assist?),

Work also continues on shallow freshwater wetlands. **Carolyn Oldham** has just returned from the US where she was studying the mediating affects of a shallow wetland on catchment scale contamination. In Perth, there is a continuation of a work on a wetland contaminated by woolscouring effluent, with research on arsenic and chromium dynamics. **Kathryn Linge** has just started a PhD on the transport of these contaminants from the effluent ponds into the wetland via the groundwater.

Clare Pullin has also just commenced her PhD on the physical processes affecting porewater seepage in shallow (< 3 m) wetlands. She hopes to use both laboratory and field techniques to further our knowledge on the best ways to use sediment domes/enclosures for porewater flux measurements.

Yuan Yi continues her work on urban runoff, incorporating metal partitioning (between dissolved and particulate) with the hydrological model, LASCAM.

SOUTH AUSTRALIA

University of Adelaide, Botany Department

from: Kerri Muller

It has been a while since we have contributed to Prattlebutt and some significant events have passed. Proto-Doctor **Brownlow** has handed in - Thesis title: *Water regime and the aquatic vegetation of Bool Lagoon, South Australia*. Congratulations **Marcus** and we hope you get your acceptance letter soon to put an end to your agonising wait. **Marcus Cooling** graduated with his Ph.D. entitled '*Adaptations of aquatic macrophytes to seasonally fluctuating water levels*' in May. Since then he has been working with **Paul Manning** on new wastewater treatment wetlands, The Range and Magazine Creek, being constructed by MFP Australia. He is currently co-ordinating the establishment of terrestrial plants, the biological monitoring of Barker Inlet and planning the new aquatic plantings for next year. He seems to be enjoying his new position and looks dapper in his suit. High powered dressing is becoming quite the norm with our new doctors not withstanding **Lisa Mensforth** who also graduated in May (Thesis title: *Water use strategies of *Melalucaca halmaturorum* in a saline swamp*) and is now consulting with Rust PPK and enjoying living it up after years of student living (catch her on the mobile, baby!!). Good on you guys! It is good to see that there is life after the thesis. **Stu Blanch** is writing madly and dreaming of being finished and overseas. **Justin Brookes** is similarly planning a trip around ASL 97 by when he plans to be finished and relaxing before starting work - good luck with the job hunt!

Unfortunately most of our group will be unable to attend ASL this year. Among these are **Kay Morris** who is writing up and will be attending Australian Plant Physiology (good luck getting a place as a student speaker) and **Karen Westwood** who had a challenging field season last summer and feels her time is best spent in Adelaide generating numbers. **Michelle Bald** has flown the coup to Ithaca, Up-state New York where her fella has taken up a post-doc in Cornell's plant nutrition lab. Her project investigating competitive growth between *Typha* and *Triglochin* in various soil media is still humming along in the ponds so it almost feels like she is still with us. She is writing over there and determining what else she needs to do to complete her doctorate.

Sean White is still subjecting *Typha* to countless injections, as well as many other innocent victims at Bool Lagoon, in the name of investigating the ecological significance of plant pressurisation. **David Probert** has completed his Honours on the macrophyte plantings at the MFP Australia wetlands gaining a 2A. Well done David! and best of luck with your future work. We have a new honours student **Rudi Regal** who will be looking at the effect of various heavy metals on algal productivity (as measured by changes in FDA readings) at the MFP wetlands. He got meaningful results from his first run on the flow cytometer so things are looking good. The big Cahoon (George, that is) is speaking at a microbiology conference in Adelaide at the same time as ASL so we won't be seeing his smiling face at closing in Albury either.

I guess that just leaves **me** - I have begun writing and aside from some tedious soil and water analyses it looks like I am drawing close to the day I will never have to wade through 10,000 people's jobbies in the sleepy town of Willunga again. Won't that be fabulous! Never have been too keen on the festering sewage to tell you the truth!! So see you in Albury for the much awaited unveiling of the ASL banner. Thankyou to everyone who has given me feedback on the banner. It was appreciated even if my responding emails sounded abrupt. Don't worry Barry, I have put some chemistry on there too now.

NORTHERN TERRITORY

Centre for Tropical Wetlands Management Northern Territory University

From: Alison Pouliot

Territorians have been enjoying a mild and sunny dry season after the cyclonic effects of the past wet. The Science Faculty has finally made the big move to the new campus at Casuarina where those located on "good side" of the building get to gaze out over the ocean. **Michael Douglas** and **Alison Pouliot** have completed the first two sampling rounds of a project looking at seasonal changes in species-area relationships for stream stone fauna in Florence and Walker Creeks in Litchfield National Park. Funnily enough there seemed to be no shortage of interested volunteers who assisted us in the field work at this spectacular destination! However they seemed to have miraculously disappeared now that there's a laboratory full of samples to sort and identify. Field work has also been continuing at Kapalga to collect macroinvertebrates and macrophytes to assess the recovery of stream biota and riparian vegetation after experimental burning treatments.

The CTWM was among the 10 recently successful submissions in attracting funding from the National Wetlands R&D Program. The collaborative project involves NTU,

Griffith University, ERISS and Parks Australia North and University of Western Australia. The project aims to assess the impacts of the introduced pasture species Para grass (*Brachiaria mutica*), on biodiversity and ecosystem processes and the effectiveness of a range of control methods. The study site for the project is the Magela Creek floodplains in Kakadu National Park and will be conducted over a two year period. Stuart Bunn recently visited the Territory to discuss the project with **Michael Douglas** and ERISS, and to spread his own particular brand of Ross River virus.

In between Litchfield bug sorting, the CTWM in collaboration with the CRC for Sustainable Development of Tropical Savannas, recently contributed the freshwater ecology component of an overview on the effects of the north Australian grazing industry on wetlands and riparian zones. The overview, funded by the Meat Resources Corporation, is a rapid review of relevant published, current and proposed research in northern Australia. The overview is being overseen by **Rose Hook**, CSIRO Water Resources and should be completed later this year.

A two-day workshop on marine turtle conservation was held at NTU on 3-4 June 1997. The workshop brought together researchers and managers across Australia to discuss issues in marine turtle management and conservation. Delegates included representatives from Aboriginal organisations (Dhimurru Land Management Aboriginal Corporation, Larrakia Association, Bawinanga Aboriginal Corporation, Anindilywaka Land Council), Parks and Wildlife Commission, Environment Australia, Department of Primary Industry and Fisheries, Kimberley Land Council, Northern Territory University and several non-government organisations. The conference was very successful and received national media coverage. The workshop was jointly funded by Environment Australia, the Centre for Indigenous Natural and Cultural Research Management and the CTWM. The CTWM also provided administrative support. Proceedings from the conference will be jointly published by the CTWM and CINCRM.

Steve Skull, from James Cook University, recently spoke at a CTWM seminar held at NTU. Steve presented a talk on the findings from his PhD thesis on *Melaleuca viridiflora* habitats in Queensland. The talk covered issues related to conservation status, fire management and weed invasion and provided some interesting contrasts with the NT. In addition to the regular seminar series, the CTWM is also keen to assist in the organisation and provision of facilities for visiting speakers who may wish to give a seminar. So let us know if you're thinking of heading up to the Top End!

The University will be hosting The Australian Society for Fish Biology in July and the CTWM will be funding three students to attend the conference. The Darwin brewery is working overtime in anticipation of the influx of southern fish biologists.

ERISS

from: Lisa Thurtell

The wetland management section of eriss is currently consumed by preparations for the upcoming visit of NTU Masters students (courtesy of Dougo). The two week module called tropical wetland management is part of the NTU's Tropical Environment Management course. Most of the wetland management team has become involved in one way or another with **Abbie Spears** co-ordinating the whole complicated process. The Masters students can rest assured they will be treated to the best Jabiru has to offer!

Max Finlayson has returned from a meeting with the Ramsar technical panel in Switzerland followed by a brief visit to Russia. He is now up to his elbows in lecture notes and work plans. But it won't be long until he is off again to Ghana to develop monitoring protocols for coastal lagoons.

While **Max** has been in the country he has been busy with a number of publications. **Max**, **Rick van Dam**, and **Chris Humphrey** are submitting a paper on early warning systems, risk assessment and thresholds of change in wetlands. **Michael Storrs** and **Max** have also recently completed an overview of the conservation status of wetlands of the Northern Territory.

Kym Brennan has just finished two supervising scientist reports, the first on the flowering and fruiting phenology of native plants in the ARR, the second is an annotated checklist of vascular plants of the ARR.

A number of joint projects have now got the go ahead. Firstly, a project on paragrass which will involve eriss, NTU (**Michael Douglas**) and Griffith University (**Stuart Bunn**). Secondly, the use of radarsat imagery to look at wetland inventory, which is a joint project with UNSW (**Tony Milne**). **Bob Pidgeon** and **Ann Bull** are also involved with the National Wetland Program with a project to develop protocols for a potential National Wetland Inventory.

The all encompassing Coastal Monitoring program has acquired a differential GPS to map monitoring sites (and how to get there!), on the floodplains and salt flats, within 1m. Since its arrival **Mike Saynor** has been seen roaming the institute with what looks like a large hors d'oeuvre tray looking more than slightly anxious. Extensive mapping and searches for existing information will be going on over the next three months as a metadatabase is prepared on coastal change, including an analysis of the relationship between land use and environmental change.

Kym Brennan and **Lisa Thurtell** have just returned from a successful follow up field trip to Arnhemland as part of the collaborative work on wetlands with the Bawinanga

Aboriginal Corporation. The BAC hope to develop management plans to reflect aspirations of the local people, **Kym** hopes to assist in this process. **Kym**, with the help of **Otto** and **Hedley**, BAC community rangers, collected and identified riparian and wetland vegetation. **Lisa**, also with the assistance of **Otto** and **Hedley**, sampled invertebrates in a few of the rivers and billabongs in the area. Estuaries were also surveyed but the thigh deep mud and a healthy fear of crocs proved a bit of a hindrance (any volunteers for the next trip).

The Biological Monitoring section's current QA/QC work for Monitoring River Health seems to be drawing to close with final reports being prepared by **Ruth O'Connor** (with **John Hawking**), **Chris Humphrey** and **Lisa Thurtell**. **Chris Humphrey** is also involved with the ANZECC review of water quality guidelines which is close to completion.

The Biological Monitoring section has also undergone an internal review by **Max**, with external assistance from **Jenny Davis**, and is in the process of creating a demonstration program to monitor point source pollution.

Risk assessment/ecotoxicology have seen the successful establishment of an axenic culture of the local duckweed, *Lemna aequinoctialis*. This will provide an opportunity to assess the effect of the mimosa-control herbicide, Tebuthiuron, to a native non-target species. **Nadine Riethmuller** has commenced her Masters research project, assessing the effects of pH and water hardness on copper and uranium toxicity to two tropical freshwater organisms.

Peter Bridgewater has recently been appointed to the position of Supervising Scientist and Chief Scientific Advisor to Environment Australia. Peter was previously the Director of Australia Nature Conservation Agency (now Parks Australia).

NT Department of Lands Planning and Environment Water Resources Division

from: Armando Padovan

The dry season is well and truly upon us, and so it is the time of year to collate and review the field work completed over the wet season just gone. The field component of the Darwin harbour stormwater run-off project is being compiled by **Armando** with a view of presenting some of this data at a conference later this year. **Simon Townsend** has resumed work on the Reynolds River after water levels have subsided sufficiently to allow him access. **Simon** is looking at changes in the algal population and the general limnology of three billabongs in this river system. **Simon** has also preparing to present a paper on the Kapalga work (effect of fire regime on water quality of run-off) to a conference in Darwin shortly. Sorting and identification of MRH macroinvertebrates by **Cyrus** continues. One entire run of edge samples has been

completed and statistical analysis will commence once all the data has been entered and checked. **Jane**, in addition to the sorting work, is busy preparing the MRH milestone report.

36th ASL Congress
Albury Convention Centre

September 26-29 1997

Registrations due by August 15th

contact: asl97@aw.latrobe.edu.au

ANNOUNCEMENTS

MONITORING RIVER HEALTH

One day conference organised by the River Basin Management Society 7 July 1997, Menzies College, Latrobe University, Melbourne.

8:30 am registration, 9 am start.

This conference will provide participants with an appreciation of the range of techniques that can be used to assess river health. Several leading researchers and practitioners will review the usefulness of using physico-chemical information, water quantity, fish, macroinvertebrates, stream condition, algae and plants in assessing river health. In addition, the contribution of data collected by Waterwatch will be discussed. This conference will be invaluable to resource managers and waterway practitioners.

Conference Fees

RBMS members	\$90
Other delegates	\$100

Registration closing date July 1st 1997

For more information or to register please contact

Ron Hodges
RBMS
Larch Cres.
Mt Waverley Vic 3149
Tel (03) 9802 4859
Fax (03) 9802 2315



What is River Health?

Assessing the condition of our rivers

Cooperative Research Centre for Freshwater Ecology

University of Canberra

November 5&6 1997

Assessing river health

Many people find the term 'river health' helpful when thinking about the issue and they see some analogies with human health. Unfortunately there is little agreement as to what we measure to assess river health and how we present the information.

To promote an appraisal of what has been achieved in Australia and overseas in the last few years the CRC for Freshwater Ecology is mounting an International Conference on this issue.

Topics include:

- Physical indicators of river health • Chemical indicators • Biological indicators

Guest speakers:

*Professor James Karr, University of
Washington*

Professor Colin Townsend, University of Otago

This conference is targeted towards research staff, consultants and experienced agency professionals concerned with assessing and reporting the condition of water bodies.

Registration fees:

If paid by September 1, 1997	\$320
If paid after September 1, 1997	\$370

Registration forms are available from the Conference Secretariat (details below) or Karen Markwort, CRCFE. Phone (06) 201 5369. Fax (06) 201 5038 or email: **Error! Bookmark not defined.**

Conference secretariat

Australian Convention and Travel Services Pty Ltd (ACTS) has been appointed as the Secretariat for the Conference. Enquiries should be sent to:

River Health Conference ACTS

GPO Box 2200

CANBERRA ACT 2601

Phone: (06) 257 3299

Fax: (06) 257 3256

Attention!

The last few copies of these AWT
identification guides
are available now.

- Chironomidae of NSW (applies to most of Australia!) by Peter Cranston \$65
- Stonefly nymphs of NSW by Cathy Yule \$35

Please order from:

AWT EnSight,
51 Hermitage Rd,
WEST RYDE, 2114,

enclosing a cheque made out to **Australian Water Technologies**, marked to the attention of Monica Mulder.

Wanted

Research Scientist for the GTOS Secretariat

GTOS is looking for a research scientist who could work through an FAO Programme of Cooperation, called an Academic Exchange Agreement.

for more information search the GTOS Web Site
<http://www.fao.org/gtos/>

NEWS FROM FASTS

Email: fasts@anu.edu.au

Web address: <http://www.usyd.edu.au/su/fast>

SCIENCE TOPS IN POLL VOTE

A new poll shows that Australians are more interested in brains than brawn.

The survey of 1060 Australians from across the nation shows that they would rather follow media stories about science, medicine and technology than sport, crime or politics. It was conducted by AGB McNair on behalf of CSIRO.

"The survey shows that twice as many Australians want to read about science rather than sport or politics. Science beats crime and employment as a popular media topic.

"Science is fresh and exciting. It describes comets, and explains tiny nano-machines and cloning animals and humans. It is also vital to the lives of ordinary Australians," he said.

"It is difficult to think of any sustainable wealth-creating industry of the next century, or any solution to environmental issues which does not rely heavily on S&T."

Dr Baker said he was asking Australian media to create heroes of Australian science, on the same basis as they create heroes in sport and entertainment by frequent reference to their performances.

FASTS CIRCULAR FOR APRIL.

1. FASTS goes West!

The FASTS submission to the West Review of Higher Education has called on Government and universities to work together to create an efficient, competitive, well-equipped university sector.

The increase in the student numbers combined with a decrease in the funding per effective full-time student has put enormous strains on university budgets. Current realities are that not all 37 universities in Australia can offer top-level scientific and technological facilities in education and research in all disciplines.

Reorganisation of the higher education sector is required - and the rearrangements will not be minor. FASTS investigated and considered the consequences of three alternative courses of action in our submission:

- a. closing some universities
- b. refocussing the universities within a regional area to eliminate course duplications
- c. concentrating infrastructure support on the highest-performing departments.

We also urged further support for infrastructure - libraries, labs, buildings and equipment - to accompany the process of reorganisation; and pointed out that it is almost impossible for

university graduates to meet industry expectations unless the university equipment they use matches industry standards.

Many university laboratories no longer meet basic occupational health and safety requirements, and are increasingly operating on outdated and failing equipment.

I have to thank Dr Chris Easton for his sterling work in drawing the submission together. A full copy is available on our web site.

2. The Budget

The Budget is being handed down on Tuesday May 13. Peter McGauran has again invited me to view the Budget from his office, and to discuss SET matters with him. I am not expecting any dramatic news as far as S&T is concerned, although there have been disturbing rumours about cuts to the CRC program.

We will pay particular attention to the five matters raised in our pre-Budget submission:

- a. the impending shortage of qualified mathematics and science teachers.
- b. creating a national vision for Australia which develops specific aims for S&T
- c. the restoration of the 150% tax deductibility for industrial R&D.
- d. access to high-quality science education and research at Australian universities.
- e. a whole-of-Government approach to Australia's Ocean Territory

3. FASTS in science policy

Minister McGauran has continued to express appreciation for the role FASTS plays in policy formulation. In a recent letter, he said he had instructed his Departmental officers to seek our advice on international scientific collaboration.

He has also invited me to discuss with Chief Scientist John Stocker Victorian initiatives to set priorities for S&T, which were views I initially raised with the Minister.

The role of FASTS in policy areas was the subject of a television interview which Lesley Warner of UCQ recorded with me for the Open Learning Program. It turned out to be a good discussion of FASTS' role in policy, and Member Societies might find it useful to show to their meetings. Copies can be borrowed from the FASTS' office.

4. The WISSET Report

WISSET made recommendations about boosting the participation of Women in Science, Engineering and Technology (WISSET). It was completed in May 1995, and has since disappeared into a black hole. The Labor Government failed to respond in its final months of office (although the Report was commissioned by one of its Ministers).

The new Government has declined to make a formal response to what it sees as a Labor initiative, so even though the Report has been dubbed "a valuable analysis" it still lies dormant. We are urging the Government to take a more active interest in its findings. Australia suffers because the whole area of SET "expresses a strong sense of masculine ownership" (WISSET p3), to the extent that only 6.9% of staff in engineering and processing in higher education institutions are women.

5. Affiliate members

A number of groups have been invited to become non-voting Affiliate Members of FASTS, at the discretion of the Board. They all have an interest in S&T policy and share the broad aims of FASTS but do not fit the narrow definition of a professional or learned society as set out in the FASTS' Constitution.

I believe that the support of these groups will bolster FASTS' capacity to represent the broad interests of S&T groups to Government in Australia. Government prefers to deal with large representative groups which cover the broad sweep of interests of that sector, rather than smaller bodies with strong sectional interests.

6. The Stocker Inquiry

The submission and discussion rounds are almost complete, and the final report is expected about June 22. I expect that among other issues the inquiry will comment on the way in which priorities are set in different portfolios dependant on a S&T information base, and on the advisory processes within and to Government.

7. Senate inquiry into Commonwealth powers in environment

The Senate has initiated an inquiry into Commonwealth powers in environmental protection and ecologically-sustainable development in Australia, to be chaired by SA Democrat Senator Meg Lees.

An information pack on how to make a submission and the terms of reference are available from Committee Secretary Robert King on (06) 277 3525. The closing date for submissions is Friday June 20.

8. John Bell

John Bell, former Deputy Secretary of DIST, has resigned to take up a position as Managing Director of ANUTech at ANU in Canberra from May 19. He has been one of FASTS' strongest allies and supporters, and his resignation places added pressure on the Chief Scientist and his staff in DIST.

9. The newImages Conference

I participated in this Anglo-Australian Conference in Sydney. It compared the roles of the Chief Scientists of the two countries. In the UK the position is supported by 100 staff, but one wonders whether a cost-benefit analysis would show the advisory function there has been any more effective than in Australia.

Likely outcomes include additional exchanges for young scientists, and a cooperative approach to science festivals of each country. But it is clear that the UK has a definite role in the European Union and Australia a growing role in Pacific Rim SET alliances.

10. Media

President-elect Peter Cullen and I had lunch with the Editor and Science Writer of the Canberra Times, to discuss increasing coverage of SET. We were advised to maintain regular contact (not only when we need them!), and make our stories locally relevant.

I still look to every regional newspaper in Australia having regular weekly S&T sections, as the Canberra Times does. Toss Gascoigne is a valuable mentor in this area.

FASTS CIRCULAR FOR MAY.

1. The Budget for science

On first view, S&T based portfolios had done pretty well in the 1997-1998 budget. It had managed to avoid any further big cuts, and some even suggested that it was "steady as she goes".

But with the release of supplementary papers, the real position of the Budget is becoming clear. "Steady as she sinks!" - Ian Lowe's description - might be more appropriate, particularly if one looks at the Forward Estimates.

Nothing the Treasurer said on Budget night indicates that the Government has accepted the role of S&T in solving major economic and environmental challenges facing Australia. Not once in his speech did he use the words "science", "technology", "education" or "innovation".

The Prime Minister has made some strongly supportive speeches in recognition of the value of research in Australia's development objectives, and Peter McGauran has been obviously successful in protecting factors in his own budget sector against big cuts. But when one looks across the major portfolios dependent on S&T, the future is not secure.

We are still waiting for a clear articulation of the role of S&T in Australia's future.

The Budget has, on close analysis, recorded a steady chipping away at funds available for S&T, with the Science and Technology Budget Statement showing an overall reduction in real terms of 1.3 per cent.

The CRCs have been cut, the universities have had further reductions to their operating grants, CSIRO has been hit with an "efficiency dividend".

This has been offset to some extent by small increases to ARC and the NH&MRC, to funding for rural R&D, and targeted Higher Education R&D.

The Australian Geological Survey Organisation has been cut, as has Defence Science. The Energy R&D Corporation has quietly been abolished, a move which should have attracted more industry comment than it did.

But the worst news is reserved for the Forward Estimates. These figures set out the Government's long-term intentions, and they show reductions in all areas.

Australia plans to enter the new millennium spending less on CSIRO, less on the ARC and NH&MRC, less on the CRCs and international and other research. In some cases these estimated cuts are massive. In health research, current spending of \$174 million is projected to be cut to \$131 million in 2000-2001.

The challenge that now emerges is for industry, the education sector, scientists and technologists and society as a whole to convince Government - within this next 12 months - that there must be justifiable increases in the S&T Budget.

And the argument has to be taken more widely than Minister McGauran and the portfolio of Industry, Science and Tourism, to the other portfolios directly dependant on science and technology based knowledge.

2. Careers in Research

Minister Peter McGauran has agreed to launch the proceedings of the Careers Forum which FASTS and the NTEU hosted at the National Press Club. The booklet will contain the speeches delivered at the Forum, and recommendations for future action.

We plan to make this an occasion for the Minister to sit down with some of the young scientists finding it difficult to establish worthwhile careers in research. A copy of the proceedings will be mailed out to all Forum registrants.

3. PMSEC

The PM demonstrated genuine enthusiasm for the PMSEC meeting last week. He expressed his interest both publicly and privately, and said at lunch that he had gained a new appreciation of the long time it can take for research to come to fruition.

Major topics on the agenda were the telecommunications revolution, skin cancer, and the Great Barrier Reef. There was also a Ministerial response by John Anderson and Robert Hill to the recommendations from last year's session "Managing Australia's inland waterways"; and on S&T teaching in primary schools.

I attend the meeting as FASTS President, as one of the six ex officio members. FASTS is consulted about possible topics, and Member Societies should forward suggestions to the FASTS office.

4. Council on November 20

The Minister, Shadow Minister and Democrat spokesperson have all expressed interest in addressing FASTS Council in Canberra on November 20. All Member Societies are invited to send representatives, and to contribute to the makeup of FASTS "Top Ten Policies" for 1998. The Chief Scientist will also be in attendance.

5. Enrofloxacin and the Minister for Health

I have written to Dr Michael Wooldridge, to express the concerns of the Australian Society for Microbiology (one of our Members) about moves to use enrofloxacin as a growth promoter in the chicken industry.

This has significant implications for human health, and the use of enrofloxacin in this way could render ineffective those drugs used in the standard treatment of serious complications of salmonella (such as blood poisoning) in humans.

The matter is currently before the National Registration Authority. The FASTS' Board expressed concern that the NRA may not be giving adequate consideration to the expert scientific advice being offered by the ASM and other authoritative bodies which have the expertise to advise Government on this issue.

6. Science bodies compare notes

Top administrative figures from nine S&T organisations met this month at their regular quarterly meetings hosted by FASTS. The discussions bring together representatives from groups like the Deans of Science, the CRCs Association, the AV-CC and CSIRO.

A major discussion point was the proposal from Australian Science Communicators that science organisations should combine to run a new showcase for science, aimed at bringing the best Australian science to public attention through the media. The event would be part of National Science Week in May 1988, and discussions are continuing.

7. Mail from the Ministers

Minister John Moore wrote to advise FASTS of PIIP, the watered-down successor to the Factor (f) scheme.

Minister McGauran sent the proposed scope of the marine S&T plan for Australia, and invited comment. He also invited scientists from non-English speaking backgrounds to register for possible appointment to Government bodies.

8. Media

FASTS issued a media release following the Budget, listing nine spokespersons to comment on S&T funding. They included representatives of the Academy of Technological Sciences, CRC Association, WISENET and the Deans of Science.

FASTS CIRCULAR FOR JUNE

1. The Stocker Review

Minister McGauran has not yet set a time frame for responding to John Stocker's Review of the way S&T is organised in Australia, but certainly "Priority Matters" has given him (and Cabinet) plenty of food for thought.

Stocker picked up a number of FASTS' issues, such as the lack of vision within Australia for science and technology, and the need to offer industry greater incentives to undertake R&D. I gave the Review and its 30 recommendations eight out of ten, given the time-frame and the constraints of its terms of reference.

The Review also provided a welcome re-affirmation of the CRC Program, at a time when Government seems to be walking away from election commitments to maintain funding.

There are sensible recommendations (the substance of which may need some refinement) on how scientific advice should feed into the Government decision-making process, and on restructuring PMSEC and ASTEC. This would clear up a lot of the confusion which has clouded these two bodies, and how an inter-Departmental coordinating committee (the CCST) should link with them.

Stocker recommends a chief science adviser should be appointed in all Portfolios with significant S&T responsibilities, and this too seems a sensible coordinating device. Currently only the Department of the Environment has such a position.

How will the Government react? FASTS has urged it to adopt some of the low-cost, non-controversial ideas immediately. These would include new arrangements for a streamlined PMSEC and ASTEC, and the CCST coordination.

We would like other measures adopted too, but some of these cost money and Government has shown little enthusiasm for others.

For instance, Stocker joins the chorus of criticism levelled at Government by industry and science groups about its lack of vision. FASTS would welcome any steps towards articulating a preferred vision for what Australia will develop to in the 21st century. Then S&T can analyse how to support that vision.

The Review urges the Government to review its overall assistance to industry for innovation, and this must involve decisions made in accord with an agreed vision of Australia's sustainable development.

FASTS will formulate a formal response in the next month, and we would welcome comment on the Review from all Presidents by July 21. The Stocker Review is available on the web at

dist.gov.au/science/cs/index.html or in hard copy by phoning DIST on (06) 213 6483

2. FASTS' Board meeting in June

The Board raised a number of concerns, all in the context of a sharp downward trend in the Government forward budget estimates for S&T (for instance, in health research current spending of \$174 million is projected to be cut to \$131 million in 2000-2001).

But as Minister McGauran has said, forward estimates are just that - estimates. They can be changed upwards or downwards depending on circumstances. The onus is on the S&T community to demonstrate repeatedly its value to Government.

Specific Board issues included a DEETYA report indicating a 3.5% decrease in undergraduate science enrolments. This decrease has been compounded because a number of universities lowered their TER entry scores.

Concern was also expressed over the lack of action on school issues, with the suggestion that the emphasis was on testing rather than maintaining standards. And the Board decided that FASTS needed to build better links with industry.

I would be interested to hear from Members with strong industry links, and to know how you developed them.

3. New Vice-President

Dr Geoff Hudson, President of the Australian Geoscience Council, has been elected Vice-President. He takes over from Richard Arculus, whose commitments overseas have made it difficult to contribute the way he would have liked. Geoff's appointment is until the AGM in November.

4. Popular science

A recent AGB McNair survey showed that twice as many Australians want to read about science rather than sport or politics, and that science beats crime and unemployment as a popular media topic.

In the FASTS media release on the survey, I said: "The batting performance of Mark Taylor and the political agenda of Pauline Hanson have come under the most intense media scrutiny. But where is the equivalent scrutiny of S&T?"

I have written to the editors of Australia's top media outlets urging them to give greater coverage to science, and have already made an appointment to discuss the matter with one editor. I will also be writing to Presidents of all Member Societies on this, urging them to be proactive.

5. Launch of Careers Forum proceedings

Minister for Science and Technology Peter McGauran has agreed to launch the Proceedings from the Forum on Science Careers (which FASTS and the NTEU organised jointly).

There will in fact be two launches, one in Canberra at 10.30 on Tuesday 22 July; and the other in Melbourne at 10.30 Thursday 31 July. Young research scientists are invited to attend, and it will be an excellent opportunity to discuss the issue with the Minister. He did not have time to answer questions at the Forum, because he had to get back to Parliament (it was a sitting day).

Contact Julie Wells at NTEU for invitations, on jwells@nteu.org.au

6. Meeting with Democrat Senator Stott Despoja

FASTS' secretary Chris Easton, Toss Gascoigne and I met Senator Natasha Stott Despoja, Democrat spokesperson on S&T matters, and her science adviser Dr Charles Lawson. We had a good discussion on a number of matters: the taxation of post-graduate scholarships, the West Review of Higher Education, women in science, and differential HECS fees.

This maintains FASTS non-partisan approach to political groups. We have established useful links with the three major groups in Parliament - Government, the Labor Opposition, and the Democrats - and can discuss S&T policy with all of them.

7. Council on November 20

Peter McGauran, Martyn Evans and Natasha Stott Despoja have all accepted invitations to address FASTS Council in November. The dinner that night will be at the National Press Club, and will be addressed by a leading figure from S&T.

All Member Societies are invited to send representatives, and to contribute to the makeup of FASTS "Top Ten Policies" for 1998. Formal information about the meeting will be sent out to Member Societies shortly.

Please canvass your members for the appropriate "Top Policies" from your Society's perspective.

8. How FASTS can help

FASTS works constantly with Ministers and the Opposition parties, and the science media. Member Societies might like to make use of this expertise.

Executive Director Toss Gascoigne can help Members make contacts in Canberra, and has worked with Member Societies on media releases, policy launches and correspondence with Ministers. His contact details are: phone (06) 257 2891, fax (06) 257 2897, email fasts@anu.edu.au

9. New web site address

Graham Johnston, former president of FASTS, ASCEPT and the RACI, does an excellent job in keeping the FASTS' site right up to date. It has all the basic information about FASTS, and provides links to our Member Societies.

Now we have a new address for the FASTS web site: (*see the beginning of the FASTS section*)

10. Media

I have noticed articles in several Society newsletters which, if presented in simple terms, would be of interest to the general media. One example is a statistical survey of the way people choose Tattslotto numbers, which appeared in the Statistical Society newsletter.

We need to get greater coverage of S&T in the media, and we know people are interested in reading about it. Member Societies might consider putting out a media release highlighting an interesting article in their newsletters and journals. Toss Gascoigne can help with this.

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CONFERENCE REPORTS

How about sending in some conference reports from:

- NABS 1997 (Texas)
- the Aquatic Ecology Postgraduate Workshop
- Sampling Nutrients in Aquatic Ecosystems Workshop (Canberra)
- AWWA Workshop (Brisbane)
- Paroo Workshop (Hungerford)

CONFERENCE CAPERS

AUSTRALIA 1997

- **Monitoring River Health**, River Basin Management Society, 7 July 1997, Menzies College, Latrobe University, Melbourne. Registration closing date July 1st 1997. (*see Announcements Section*)
- **10th International Congress of Protozoology (ICOP-X)**, 21-25 July 1997, The University of Sydney, Australia. Registration documents and abstract forms are available from: ICOP-X Congress Manager, Business Meetings & Incentives, PO Box 561 Crows Nest NSW 2065 Australia
- **Wetlands Alive, Wetland Care Australia Convention**, 25-27 July 1997, Renmark Hotel, Renmark, South Australia Riverland. For more information contact Susie and Tony Sharley, Tel/fax: (08) 8595 5481
- **Landcare: Changing Australia**, 16-19 September 1997, Adelaide Convention Centre, Adelaide, SA. Further information from: Andrew Curtis Ph: 08-8303 9339; Fax: 08-8303 9320 Email: landcare@pi.sa.gov.au
- **Australian Society for Limnology**, 26-29 September 1997, Albury, NSW. Registration details in the March 1997 Newsletter (ASL Vol 34(1)). Information from Alan Chick, Fax: 060-431 626, Email: chicko@mdfrc.canberra.edu.au
- **Advancing Integrated Resource Management: Processes and Policies** (2nd National Conference on Integrated Catchment Management), 29 September - 1 October 1997, Manning Clark Centre, ANU, Canberra. Information from Mr Ron Hodges, 16 Larch Crescent, Mt Waverley, Vic 3149. Ph: +61 3 9802 4859; Fax: +61 3 9802 2315. Email: rbms@vicnet.net.au; or visit the Home Page: <http://www.vicnet.net.au/~rbms>
- **Workshop on Wetland Management**, 29 September - 1 October 1997. Details from Bill Williams, Department of Zoology, University of Adelaide, Adelaide SA 5005. Fax: (08) 8303 4364.
- **Ecology Society of Australia**, 1-3 October 1997, Albury, NSW. Information from Dr Nicholas Klomp. Fax: (060) 51-9897 Email: nklomp@csu.edu.au
- **2nd International Symposium on Ecology and Engineering (ISEE) "Engineering the Aquatic Environment"** 10-12 November 1997. Venue: Fremantle, Western Australia. Jointly organised by the Centre for Water Research at The University of WA and the Coastal and Offshore Engineering Institute, Universiti Teknologi

Malaysia. The focus will be on methods for the preservation, maintenance and rehabilitation of aquatic systems in the broadest sense. The organisers hope to bring together geomorphologists, chemists, biologists and engineers to find solutions through field investigations, laboratory experimentation and numerical modelling. The focus will be on process rather than socio-economic management. Inquiries: Professor Jorg Imberger and Vicki Sly. Tel: 09-380-3911, Fax: 09-380-7115 Email: sly@cwr.uwa.edu.au; <http://www.cwr.uwa.edu.au/javindex.html>

- **The Other 99%, the Third Conservation and Biodiversity of Invertebrates**, 9-12 December 1997, Australian Museum, Sydney, NSW. The topics of symposia are: Assessing the Other 99 %, Describing the Other 99%, Invertebrate Conservation through Legislation and Policy The Invertebrate Agenda. Calls for Abstracts and Posters are now out. To receive additional information on the meeting, including the format and closing date for abstracts, please send an email to: invert@amsg.austmus.gov.au. Postal address: Invertebrate Biodiversity Conference, Australian Museum, 6 College St, Sydney NSW 2000. Ph: 02-9320 6224; Fax: 02 9320 6050

OVERSEAS 1997

- **Seventh International Symposium on Regulated Streams**, 25-29 August 1997, Tennessee Valley. The theme of this SISORS III is "managing regulated rivers for biodiversity". Primary sessions will focus on three main topics: (1) Rehabilitation of large rivers; (2) Terrestrial and aquatic interactions; and (3) Restoration of tailwater habitats. Contributed papers on any aspect of regulated flow ecology and management are also welcome for oral or poster presentation. Abstracts (<500 words) should be submitted by 20 December 1996. Selected papers will be published in *Regulated Rivers*. The conference will be held at the Chattanooga Choo-Choo Holiday Inn, Chattanooga, Tennessee, USA. Further information from Dr James B. Layzer, Tennessee Cooperative Fishery Research Unit, Tennessee Technological University, Cookeville, TN 38505, USA. Ph: 1-615-372-3094 Fax: 1-615-372-6257.
- **Seventh International Symposium on Aquatic Oligochaetes**, 18-22 August 1997, University of Maine at Presque Isle, Maine, USA. Registration forms from the organiser: Dr S.R. Gelder, University of Maine at Presque Isle, 181 Main Street, Presque Isle ME 04769-2888 USA: Fax: +207-768-9608 Email: GELDER@polaris.umpi.maine.edu

- **The Great Basin Symposium on Glacial and Postglacial Drainage - Fifty Years of Geologic, Biologic and Hydroclimatic Progress in Late Cenozoic Aquatic System History**, 17-20 September 1997, University Park Hotel, Salt Lake City, Utah. Further Information: Linda K Williams/ GBASH, 2174 Annex, Conferences, University of Utah, Salt Lake City, Utah 84112 USA. Email: llwilliams@admin.dce.utah.edu
- **Chaotic Dynamics of Planktonic Food Webs**, 8-10 October, 1997, Rostock-Warnemünde, Germany. Further information and registration from: International Conference PD Dr Reinhard Heerkloss, Universität Rostock, Institut für Ökologie, Freiligrathstraße 7/8, D-18051 Rostock, Germany. Ph: +49-381-498-2015, Fax: +49-381-498-2011. Email: rh@frserv.bio3.uni-rostock.de

OVERSEAS 1998

- **Watershed Management: Moving From Theory to Implementation**, May 3-6, 1998, Denver, Colorado, USA. The Water Environment Federation (WEF) is sponsoring a specialty conference on Watershed Management, building on the exciting 1996 conference that WEF sponsored together with the U.S. Environmental Protection Agency and 13 other Federal agencies. Attendees will hear the latest information on implementing watershed planning, protection, restoration, and education. The conference will include oral presentations, interactive discussions, posters, exhibits, and tours. Potential speakers are asked to submit an abstract for consideration. Abstracts must be received no later than the close of business on June 16, 1997. Authors will be notified of acceptance of papers by the middle of September 1997 and must prepare a manuscript by January 9, 1998 for inclusion in the Conference Proceedings. Speakers will be responsible for paying for their own travel expenses and registration fees for the conference. Registration fees are approximately \$450 for full conference, advance registration, WEF member. For each planned paper, please submit 1 copy of both an information sheet (below) and a typed abstract (300-500 words, one page, single spaced). For further information on Abstracts and the Conference contact: Greg McNelly (Email: gmcnelly@wef.org) or Technical Programs - Abstracts, Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314, Phone: (703) 684-2400
- **XXVII International Association of Theoretical and Applied Limnology (SIL)**, 9-15 August 1998, Dublin, Ireland. Theme for the congress is "water of life". Further information from: Declan Murray, Secretary General, XXVII SIL Congress, UCD Environmental Institute, Richview, Clonskeagh, DUBLIN 14, IRELAND. Information can also be found at the web site: <http://nis.rtc-tallaght.ie/conferences/sil98/sil98.htm>
- **International Interdisciplinary Conference Headwater Control IV: Hydrology, Water Resources and Ecology in Headwaters**, 20-23 April 1998, Meran/Merano,

northern Italy (The Alps). This conference will focus on the interdisciplinary aspects of scientific and applied water resource management in headwaters. It will aim to link the perspectives of the research scientists (hydrologists, ecologists, etc.), land-management practitioners and policy makers through consideration of the problems caused by pollution, land erosion, and environmental degradation. The conference will provide an international forum for the evaluation of alternative land management, environmental protection and land reclamation practices and policies. The conference is intended as a balanced mix of scientific approaches and practical applications. Both oral and poster presentations are planned. For more information contact: HeadWater'98, > c/o European Academy, Weggensteinstrasse 12/A, I-39100 Bozen/Bolzano, Italy. Ph: +39 - 471 - 30 61 11; Fax: +39 - 471 - 30 60 99; Email: HeadWater98@ms.sinfo.interbusiness.it; Home Page <http://www.EURAC.edu/headwater>

ASL VOLUNTEERS

The following people have volunteered to speak as experts on behalf of the ASL. If you wish to be included on the list contact:

Dr Richard Marchant (ASL Secretary)

Email: rmarch@pioneer.mov.vic.gov.au

The following members are prepared to speak on behalf of the ASL on their area of expertise.

Name	Area of Expertise	Contact Details
Prof A. Arthington	in stream flows, ecology of exotic fishes, conservation of rare fishes.	Centre for Catchment & Instream Res, Griffith University, Nathan Qld. 4111. Phone (07)275 7403 , Fax: (07)277 3759
Dr P. Boon	bacteriological issues, wetlands.	Environmental Management, Victoria University of Tech., PO Box 14428 MMC, Vic. 3000. Phone (03)9365 2214, Fax (03) 9365 2465. email: boopa@stamail.vut.edu.au
Dr A. Boulton	intermittent streams, hyporheic zones, Flinders Ranges	Ecosystem Management, University of New England, Armidale, NSW 2351. Phone (067)733760, Fax (067)732 769 email: aboulton@metz.une.edu.au
Dr M. Brock	temporary wetlands, aquatic plants	Botany Department, University of New England, Armidale NSW 2351. Phone (067)732 578, Fax (067)733 283 email: mbrock@metz.une.edu.au
Dr S. Bunn	stream ecology, ecology of riparian zones, biomonitoring	Faculty of Environmental Sciences, Griffith University, Nathan, Qld 4111. Phone (07)8757 407, Fax (07)875 7459, email: s.bunn@ens.gu.edu.au
Dr G. Closs	ecology and conservation of freshwater fish, upper Murray River	Environmental Management & Ecology, LaTrobe University, PO Box 963, Wodonga, Vic. 3689 Phone (060)583873 ,Fax:(060)583888 email: gcloss@awc-net.latrobe.edu.au
Dr T. Entwisle	taxonomy and ecology of freshwater macroalgae	National Herbarium of Victoria, Birdwood Ave, South Yarra, Vic. 3141. Phone (03)96552313, Fax (03)9655 2350 email: Entwisle@botany.unimelb.edu.au
Dr M. Finlayson	wetlands, Ramsar convention	Alligator Rivers Region, Office of Supervising Sci, Post Office, Jabiru, NT 0886 Phone (08) 89799756, Fax (08) 89792149 email: masf@eriss.erin.gov.au
Dr T. Grant	platypus biology	Biological Science, University of NSW, PO Box 502, Cronulla, NSW 2230
K. Hortle	impact of mining, impact of development in Se Asia and PNG on rivers	Environmental Management, 18 Sharrow Road, Mitcham, Vic. 3132 Phone and Fax: (03) 9872 4101

Dr P. Horwitz	conservation of freshwater invertebrates	Dept of Science, Edith Cowan University, Joondalup Drive, Joondalup, WA 6027. Phone (08) 94055717, Fax: (08) 9300 1257 email: phorwitz@cowan.edu.au
Dr P. Humphries	fish ecology, in-stream flows	CRC Freshwater Ecology, MDFRC, PO Box 921, NSW 2640. Phone (060)43 1002, Fax:(060)43 1626 email: hump@watson.canberra.edu.au
Dr G. Jones	cyanobacterial blooms	CSIRO, PMB 3, Griffith NSW 2680. Phone (069)601563, Fax: (069)601600 email:gary@griffith.dwr.csiro.au
Dr P.S. Lake	stream ecology, conservation freshwater biota	Ecology & Evolutionary Biology, Monash University, Wellington Road, Clayton, Vic. 3168. Phone (03)9055 653, Fax:(03)9055613 email: p.s.lake@sci.monash.edu.au
Prof J. Laybourn-Parry	plankton microbial ecology, carbon cycling in lakes, Antarctic freshwater systems	Zoology Dept, LaTrobe University, Bundoora, Vic. 3083. Phone (03) 479 2278
Dr V. Matveev	plankton food webs, biomanipulation	MDFRC, PO Box 521, Albury, NSW 2640. Phone: (060) 431002, Fax: (060) 431626.
Dr R. Pearson	tropical freshwater ecology	Zoology Dept. ACTFR, James Cook, University, Townsville, Qld. 4811. Phone:(077) 814 262, Fax: (077)79 6371
J. Puckridge	ecology of arid zone rivers, ecology of freshwater fish	Zoology Department, University of Adelaide, Adelaide, SA 5005. Phone (08) 83034455. Fax: (08) 8303 4364
Dr N. Rea	wetland plant ecology, water regime, weeds and conservation	CSIRO Entomology, TERC, PMB44, Winellie, Darwin NT 0821 Phone (08) 8922 1717, Fax: (08) 8922 1714, email: naomi@terc.csiro.au
Dr R. Shiel	planktonic & littoral microfauna, billabong ecology.	MDFRC, PO Box 921, NSW, 2640. Phone (060) 431002, Fax: (060) 431626
Dr L. Townley	: groundwater-surface water interaction.	CSIRO Division of Water Resources, Private Bag, Wembley, WA 6014 Phone (08) 9387 0329, Fax: (08) 93878211
A/Prof K.F. Walker	Murray - Darling basin rivers	Zoology Dept, University of Adelaide, Adelaide, SA 5005. Phone (08) 8303 5595, Fax: (08) 83034364
Prof. W.D. Williams	Salt lakes	Zoology Dept, University Adelaide, Adelaide SA 5005. Phone (08) 8303 4455, Fax: (08) 83034364

BIBLIOGRAPHY

Please send details or copies of books, chapters, articles, periodicals, monographs, reports, newsletters, videos and CD's to Russ Shiel, MDRFC, PO Box 921, Albury, NSW 2640. Go on, do it..... see your name in print.....



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